

Program for the 41st Annual Climate Diagnostics and Prediction Workshop

Orono, Maine, October 3-6, 2016

Monday, October 3, 2016

07:00 – 09:00 Registration

08:45 – 09:00 **Welcoming Remarks – CPC and University of Maine**

09:00 - 09:20 **Keynote:** *Contemporary Challenges in Short-Term Climate Forecasting*
David DeWitt, Climate Prediction Center

Session 1: **The 2015-16 El Niño**
Chair: Mike Halpert

09:20- 09:40 *Evolution of the 2015-16 El Niño (INVITED)*
Mike McPhaden, NOAA/PMEL

09:40- 10:00 *The 2015-16 El Niño and What's Next*
Michelle L'Heureux and the CPC/IRI ENSO Forecast Team,
CPC/NCEP/NWS/NOAA

10:00– 10:20 *Monitoring and Diagnosis of the 2015/2016 Super El Nino Event*
Bing Zhou, Xie Shao, Beijing Climate Centre, CMA

10:20- 10:40 *Anatomy of the 2015-2016 El Nino Episode*
Agniv Sengupta (a), Sumant Nigam (a), Stephen Baxter (b), Alfredo Ruiz-Barradas (a), (a) Department of Atmospheric and Oceanic Science, University of Maryland, College Park, (b) NOAA/Climate Prediction Center, College Park, Maryland

10:40 – 11:10 Break

Session 2: **The 2015-16 El Niño (continued)**
Chair: Zeng-Zhen Hu

11:10 – 11:30 *The 2015-16 El Niño Event from Onset to Impact*
A.M. Chiodi and D.E. Harrison, UW JISAO/NOAA PMEL

11:30 – 11:50 *Did the big El Niño of 2015-16 leave the expected footprint in the US?*
Klaus Wolter, Andrew Hoell, and Marty Hoerling, University of Colorado-Boulder & NOAA-ESRL-PSD

11:50 – 12:10 *Evolution of Winter 2015/16 Atmospheric and Terrestrial Anomalies over North America: El Niño Response and Role of noise*
Mingyue Chen, and Arun Kumar, CPC/NCEP/NWS/NOAA

12:10 – 12:30 *Why the 2015/16 El Niño failed to bring excessive precipitation to California?*
Bor-Ting Jong, Mingfang Ting, and Richard Seager, Lamont-Doherty Earth Observatory, Columbia University

12:30 – 14:00 Lunch

Session 3: **Climate Modeling, MME, Prediction & Predictability I**
Chair: Dan Collins

14:00 – 14:20 *NMME Real-Time vs. Historical Predictability (INVITED)*
Ben Kirtman, University of Miami - RSMAS/CIMAS

14:20 – 14:40 *Do Statistical Pattern Corrections Improve Seasonal Climate Predictions in NMME Models?*
Tony Barnston and Michael Tippett, Int'l Research Inst for Climate & Society (IRI), Columbia Univ

14:40 – 15:00 *Long-Range Prediction using the North American Multi-Model Ensemble (NMME) and Climatological Observations for Maritime Prediction and Analysis Support Service (COMPASS)*
Alison O'Connor(a), Zac Bathen (a), Ben Kirtman(b), Ray Bell(b), and Joe Gorman(a), Charles River Analytics(a), University of Miami(b)

15:00 – 15:20 *Nonstationarity in the magnitude and seasonality of extreme precipitation over U.S. Climate Regions*
Shaleen Jain (1) and Nirajan Dhakal (2), (1) Department of Civil and Environmental Engineering, University of Maine; (2) Environmental and Health Sciences Program, Spelman College

15:20 – 15:50 Break

Session 4: **Climate Prediction & Predictability I (continued)**
Chair: Jon Gottschalck

15:50 – 16:10 *Predictability of Week 3-4 Average Temperature and Precipitation over the Contiguous United States*
Timothy DelSole and **Laurie Trenary**, George Mason University

16:10 – 16:30	<i>A New Method for Determining the Optimal Lagged Ensemble</i> Laurie Trenary , Center for Ocean-Land-Atmosphere Studies and George Mason University
16:30 – 16:50	<i>Sub-seasonal Precipitation and Temperature Skill and Predictability using the Extended Range NCEP Global Ensemble Forecasting System</i> Christopher Melhauser , Wei Li, and Yuejian Zhu, NOAA NCEP EMC/IMSG
16:50 – 17:10	<i>Estimation and correction of the GFS systematic errors</i> Kriti Bhargava , Eugenia Kalnay, Jim Carton and Fanglin Yang, University of Maryland
17:30 – 20:00	Ice Breaker

Tuesday, October 4, 2016

07:30 - 09:00	Registration
Session 5:	ENSO Chair: Michelle L’Heureux
08:30 – 08:50	<i>The NOAA El Niño Rapid Response Field Campaign</i> Robert Webb (and many others), NOAA OAR Physical Sciences Division
08:50 - 09:10	<i>A re-examination of the relationship between ENSO and the “short rains” of East Africa</i> Sharon E. Nicholson , Florida State University
09:10- 09:30	<i>Remarkable increase in global sea surface temperature in 2014 and 2015: how was it related to El Niño and decadal variability?</i> Yusuke Urabe , Tamaki Yasuda, Hitomi Saitou, Kazuto Takemura Yoshinori Oikawa and Shuhei Maeda, Climate Prediction Division, Japan Meteorological Agency / Meteorological Research Institute
09:30–09:50	<i>Atmospheric Secular Mode and Its Possible Impact to Recent El Nino Teleconnection</i> Peitao Peng and Arun Kumar, CPC/NCEP/NWS/NOAA
09:50- 10:10	<i>North American wintertime temperature anomalies: the role of El Nino diversity and differential teleconnections</i> Mussie T. Beyene & Shaleen Jain , University of Maine

10:10 – 10:40	Break
Session 6:	ENSO (continued) Chair: Arun Kumar
10:40 – 11:00	<i>Interaction between the Indian Ocean Dipole and ENSO Associated with Ocean Subsurface Variability</i> Hui Wang , Arun Kumar, and Raghu Murtugudde, CPC/NCEP/NWS/NOAA and the University of MD
11:00 – 11:20	<i>Distinct patterns of Tropical Pacific SST Anomaly and Their Impacts on North American Climate</i> Yuanyuan Guo and Mingfang Ting , Lamont-Doherty Earth Observatory, Columbia University
11:20 – 11:40	<i>Does Vertical Temperature Gradient of the Atmosphere Matter for El Niño Development?</i> Zeng-Zhen Hu , Bohua Huang, Yu-heng Tseng, Wanqiu Wang, Arun Kumar, Jieshun Zhu, and Bhaskar Jha, CPC/NCEP/NWS/NOAA
11:40 – 12:00	<i>What is the variability in US west coast winter precipitation during strong El Niño events?</i> Arun Kumar , CPC/NCEP/NWS/NOAA
12:00 – 13:40	Lunch
Session 7:	Climate Modeling, MME, Prediction & Predictability II Chair: Ben Kirtman
13:40 – 14:00	<i>Multi-Model Seasonal Forecasting at Environment and Climate Change Canada (INVITED)</i> Bill Merryfield and Marko Markovic , Canadian Centre for Climate Modelling and Analysis, Environment and Climate Change Canada
14:00 – 14:20	<i>Subseasonal-to-Seasonal Science and Prediction Initiatives of the NOAA MAPP Program</i> Heather Archambault , Dan Barrie, and Annarita Mariotti, NOAA Climate Program Office
14:20 – 14:40	<i>Improved climate prediction services for Australia</i> Robyn Duell , David Jones, Oscar Alves, Andrew Watkins, Australian Bureau of Meteorology
14:40 – 15:00	<i>Status of Week 3-4 activities at the Climate Prediction Center</i> Jon Gottschalek , NOAA / Climate Prediction Center

15:00 – 15:30	Break
Session 8:	Climate Modeling, Prediction & Predictability II (continued) Chair: Kirk Maasch
15:30 – 15:50	<i>Assessment of Ensemble Regression to Combine and Weight Seasonal Forecasts from Multiple Models of the NMME</i> Dan Collins , NOAA/NCEP Climate Prediction Center
15:50 – 16:10	<i>Calibration and Combination of CHFP precipitation forecasts over South America using Ensemble Regression</i> Marisol Osman and Carolina Vera, Centro de Investigaciones del Mar y la Atmosfera (CIMA-CONICET/UBA)
16:10 – 16:30	<i>Validation and calibration of multi-scale catchment rainfall forecasts for use by reservoir managers in East Africa</i> Emily E Riddle , NCAR
16:30 – 16:50	<i>Moist thermodynamical changes (heat stress) in the 21st Century using Weather Research and Forecast model</i> Jonathan R Buzan , Purdue University
17:00 – 20:00	Poster Session

Wednesday October 5, 2016

08:00 – 09:00	Registration
Session 9:	Prediction, Attribution & Analysis of High Impact Extreme Climate Events Chair: Bradfield Lyon
08:30 – 08:50	<i>Enhancing Resilience to Heat Extremes: Forecasting Excessive Heat Events at Subseasonal Lead Times (Week-2 to Week-4)</i> Augustin Vintzileos , University of Maryland - ESSIC/CISC-MD
08:50 – 09:10	<i>Assessing Temperature Record Trends in Maine and New Hampshire</i> Chris Kimble , NOAA/NWS Gray, Maine
09:10 – 09:30	<i>A New Dataset to Analyze Extreme Events in New England,</i> Muge Komurcu , Massachusetts Institute of Technology

09:30 – 09:50	<i>February 2015: A Month to Remember in New England for Record Cold</i> Corey Bogel , NOAA/NWS/Caribou Forecast Office
09:50 – 10:10	<i>Prediction and Predictability of Atmospheric Rivers</i> Duane Waliser , JPL/Caltech
10:10 – 10:40	Break
Session 10:	Extreme Climate Events (continued) Chair: Muthuvel Chelliah
10:40 – 11:00	<i>Relative Impacts of Mitigation, Temperature, and Precipitation on 21st-Century Megadrought Risk in the American Southwest (INVITED)</i> Toby Ault , Cornell University
11:00 – 11:20	<i>Causes of Extreme Ridges that Induce California Droughts</i> Haiyan Teng , NCAR and Grant Branstator
11:20 – 11:40	<i>Monitoring and Prediction System for Flash Droughts over the United States</i> Kingtse C. Mo , Climate Prediction Center and Dennis P. Lettenmaier
11:40 – 12:00	<i>Storm Tracks and their Influence on High Impact Weather in the Southern Hemisphere Winter</i> Katherine E. Lukens and E. Hugo Berbery, University of Maryland, CICS-MD
12:00 – 12:20	<i>A Global Perspective on the Seasonal Prediction of Drought and Pluvials by the NMME During 2015-16</i> Bradfield Lyon , University of Maine
12:20 – 13:50	Lunch
Session 11:	Extreme Climate Events (continued) Chair: Shaleen Jain
13:50 – 14:10	<i>Understanding the Role of Land-Atmospheric Interaction in the NCEP Coupled Forecast System (CFS) on Drought Forecast for the 2011 and 2012 US Droughts</i> Rongqian Yang and Mike Ek, EMC/NCEP/NWS and IMSG
14:10 – 14:30	<i>Attribution and Prediction of China Droughts across Scales</i> Xing Yuan , RCE-TEA, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing 100029, China

14:30 – 14:50	<i>Three-Dimensional Structure of Synoptic Waves over West Africa based on Empirical Orthogonal Functions</i> Yuan-Ming Cheng , Chris D. Thorncroft and George N. Kiladis, University at Albany, State University of New York, Albany, NY
14:50 – 15:10	<i>Is the Active Atlantic Hurricane Era over?</i> Muthuvel Chelliah , CPC/NCEP/NWS
15:10 – 15:40	Break
Session 12:	Climate Services Chair: Marina Timofeyeva
15:40 – 16:00	<i>Consultation with industry to improve Australia's climate prediction services</i> Robyn Duell , Alison Cook, Jeff Sabburg, Helen Bloustein, Andrew Watkins, David Jones, Australian Bureau of Meteorology
16:00 – 16:20	<i>The Influence of Teleconnection Patterns on MCS Initiation Locations within the United States Corn Belt</i> Elisabeth Callen , Iowa State University
16:20 – 16:40	<i>Application of seasonal rainfall forecasts to inform the implementation of drought contingency triggers in selected water supply reservoirs in Texas,</i> John Zhu , Texas Water Development Board
16:40 – 17:00	<i>Delivering NOAA's Climate Information at Regional Scales, Examples on ENSO and Drought</i> Ellen Mccray , NOAA Regional Climate Services Director, Eastern Region
17:30 – 20:30	Banquet

Thursday October 6, 2016

08:00 – 09:00	Registration
Session 13:	Arctic Climate & Linkages to Lower Latitudes Chair: Sean Birkel
08:30 – 08:50	<i>Influence of the recent high-latitude atmospheric circulation change on summertime Arctic sea ice (INVITED)</i> Qinghua Ding , Axel Schweiger, Michelle L'Heureux, David Battisti, Nathaniel Johnson, Eduardo Blanchard Wrigglesworth, Qin Zhang, Kirstin Harnos, Ryan Eastman, Eric Steig, University of California, Santa Barbara

08:50 – 09:10	<i>Arctic Change Influence on Mid-latitude Weather (INVITED)</i> Judah Cohen , AER/MIT
09:10 – 09:30	<i>Inhibition of Arctic summer sea-ice melting and East Asian spring rainfall increase by western-central Pacific heating</i> Song Yang , Sun Yat-sen University, China Chudi Hu, Zhenning Li, Qigang Wu, Bian He, Junwen Chen, Kaiqiang Deng, Tuantuan Zhang and Chengyang Zhang
09:30 – 09:50	<i>Verification of experimental sea ice forecasts at the NCEP Climate Prediction Center</i> Thomas Collopy , INNOVIM, LLC, Wanqiu Wang and Arun Kumar, NOAA CPC
09:50 – 10:10	<i>Climate Scale Outlooks of Spring River Ice Break-up in Alaska</i> Richard I. Thoman Jr , NOAA/NWS/Alaska Region
10:10 – 10:40	Break
Session 14:	Arctic Climate & Linkages to Lower Latitudes (continued) Chair: Richard Thoman
10:40 – 11:00	<i>Recommendations on Categorizing Arctic Air Mass Intensity/Coverage and Improving the Monitoring of Arctic Source Regions Across The Northern Hemisphere</i> Victor Nouhan , National Weather Service Forecast Office, Caribou, Maine
11:00 – 11:20	<i>Seasonal Prediction Skill of Northern Extratropical Surface Temperature Driven by the Stratosphere</i> Liwei Jia , Xiaosong Yang, Gabriel Vecchi, Richard Gudgel, Thomas Delworth, Stephan Fueglistaler, Pu Lin, Adam A. Scaife, Seth Underwood and Shian-Jiann Lin, Princeton University/GFDL
11:20 – 11:40	<i>Advancing NOAA NWS Arctic Program Development</i> Marina Timofeyeva , Fiona Horsfall, Jenna Meyers, Michael Churma, and Richard Thoman, NOAA NWS
11:40 – 12:00	<i>Climate Drivers of Tundra Vegetation Greening/Browning in the Arctic</i> Uma Bhatt , University of Alaska Fairbanks
12:00 – 13:30	Lunch

Session 15:	General Session: Climate Diagnostics, Prediction & Analyses Chair: Stephen Baxter
13:30 – 13:50	<i>Cluster analysis of tropical modes</i> Carl Schreck , Cooperative Institute for Climate and Satellites - North Carolina (CICS-NC)
13:50 – 14:10	<i>Systematic errors in surface marine air temperature observations and their impact on the MERRA2 atmospheric reanalysis increments</i> James A Carton and Kriti Bhargava , University of Maryland
14:10 – 14:30	<i>Prototype new NOAA reanalyses for climate applications - 20CR version 3 and a replacement for NCEP/NCAR reanalysis version 1 (R1x)</i> Jeff Whitaker , NOAA Earth System Research Lab
14:30 – 14:50	<i>Rediscovering the MJO Extratropical Response: Streamfunction as a Preferred Variable for Subseasonal Teleconnection Analysis</i> Stephen Baxter , NOAA/NWS/NCEP/CPC
14:50	Workshop Adjourn
